



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,586	03/30/2001	Gamze Erten	CLAR 0103 PUSP	6809

7590

11/16/2005

Mark D. Chuey  
Brooks & Kushman P.C.  
Twenty-Second Floor  
1000 Town Center  
Southfield, MI 48075

EXAMINER
----------

MICHALSKI, JUSTIN I

ART UNIT	PAPER NUMBER
----------	--------------

2644

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/823,586

Applicant(s)

ERTEN, GAMZE

Examiner

Justin Michalski

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 1-13, 21-25, 29-41, 43-51 and 54-57 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-20, 26-28, 42, 52 and 53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 14-20, 26-28, 42, 52, and 53 in the reply filed on 22 April 2005 is acknowledged.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 14-20, 26-28, 42, 52 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Zakarauskas et al. (US patent 5,526,433).

Regarding Claim 14 and 52, Zakarauskas et al. (Hereinafter "Zakarauskas") (US Patent 5,526,433) discloses a method and computer readable medium including executable instructions for positioning a receiver array of a signal processing system, comprising: identifying at least one location of sources of at least one signal of interest (Col. 1, lines 64-67); determining a position of at least one first receiver element of a receiver array relative to the at least one location, wherein the at least one first receiver element receives the at least one signal of interest first in time (Fig. 4, microphone to 32A<sub>1</sub>); and determining a position of at least one second receiver element of the receiver array relative to the at least one first receiver element, wherein the at least one second receiver element receives the at least one signal of interest second in time

Art Unit: 2644

(microphone to 32 A<sub>2</sub>), wherein a spacing between the at least one first and second receiver elements provides at least one time delay that supports generation of a plurality of linear combinations of the at least one signal of interest and a sum of interfering sources (116, 118), and registration of a sum of interfering sources so that a first sum resembles a second sum (signals to 116 and 118, the term “resembles” is broad and undefined, therefore reading on Zakarauskas).

Regarding Claims 26 and 53, Zakarauskas discloses a method and computer readable medium including executable instructions for extracting at least one signal of interest from a composite audio signal, comprising: determining a position of at least one first receiver element of a receiver array relative to at least one location of a source of the at least one signal of interest (Fig. 4, microphone 32A<sub>1</sub>), wherein the at least one first receiver element receives the at least one signal of interest first in time (Col. 1, 64-67); determining a position of at least one second receiver element (Fig. 4, microphone 32A<sub>2</sub>) of the receiver array relative to the at least one first receiver element, wherein the at least one second receiver element receives the at least one signal of interest second in time, wherein a spacing between the at least one first and second receiver elements allows for generation of a plurality of linear combinations of the at least one source signal and a sum of interfering sources, and registration of a sum of interfering sources so that a first sum resembles a second sum (signals to 116 and 118, the term “resembles” is broad and undefined, therefore reading on Zakarauskas); receiving the composite audio signal using the receiver array (116); and extracting the at least one

Art Unit: 2644

signal of interest using at least one inter-receiver element differential in signal amplitude (116 and 118).

Regarding Claims 15 and 27, Zakarauskas further discloses the spacing supports performing signal extraction on a plurality of delayed versions of at least one received signal (Fig. 4, signal 114).

Regarding Claim 16, Zakarauskas further discloses the at least one first receiver element comprises at least one first microphone and the at least one second receiver element comprises at least one second microphone (Fig. 1).

Regarding Claim 17, Zakarauskas further discloses isolating the at least one signal of interest using at least one inter-microphone differential in signal amplitude in each of the at least one first microphone and the at least one second microphone (signals 32A<sub>1</sub> and 32A<sub>2</sub>).

Regarding Claims 19 and 28, Zakarauskas further discloses at least one first receiver element corresponding to each of a plurality of sources, wherein the at least one second receiver element comprises on a microphone element common to the plurality of sources (37A<sub>2</sub>).

Regarding Claim 20, Zakarauskas further discloses the at least one first receiver element receives at least one signal from a first source first in time and at least one signal from a second source second in time, wherein the at least one second receiver element receives the at least one signal from a second source first in time and the at least one signal from a first source second in time (Col. 1, lines 34-37).

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cezanne et al. (US Patent 5,473,701) discloses obtaining a signal of interest through background noise.

Feng et al. (US Patent Application Publication 2001/0031053) discloses obtaining a signal of interest from a plurality of sources.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (571)272-7524. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2644

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM



November 1, 2005



**VIVIAN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**